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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/919,024	07/31/2001	Harunori Hirao	4296-144	3715

7590 06/28/2007
MATHEWS, COLLINS, SHEPHERD & GOULD, P.A.
SUITE 306
100 THANET CIRCLE
PRINCETON, NJ 08540

EXAMINER

OH, TAYLOR V

ART UNIT PAPER NUMBER

1625

MAIL DATE DELIVERY MODE

06/28/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/919,024

Applicant(s)

HIRAO ET AL.

Examiner

Taylor Victor Oh

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 March 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Final Rejection

The Status of Claims

Claims 1-2 and 4 are pending.

Claims 1-2 and 4 are rejected.

Claim Rejections - 35 USC § 103

1. Applicants' argument filed 3/27/07 have been fully considered but they are not persuasive.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The rejection of Claims 1-2 and 4 under 35 U.S.C. 103(a) as being unpatentable over

Frank (U.S. 3,904,652) in view of Kerr (U.S. 3,366,648) :

The rejection of Claims 1-2 and 4 under 35 U.S.C. 103(a) as being unpatentable over Frank (U.S. 3,904,652) in view of Kerr (U.S. 3,366,648) is maintained for reasons of the record on 12/01/06.

Applicants' Argument

2. The applicants argue the following issue:

- a. Frank does not disclose any steps used during starting up of a reactor causing a raw material and the molecular oxygen-containing gas to pass a range in which the concentration of said raw material (excluding the concentration of said raw material at 0 vol. %) is less than the concentration of the lower explosion limit of said raw material and the concentration of oxygen is not less than the limiting oxygen concentration.
- b. None of the Kerr and Frank do teach a step for reaching a steady state causing a range in which concentration of the raw material is less than the concentration of the lower explosion limit of the raw material and the concentration of oxygen is less than the limiting oxygen concentration.

The applicants' argument have been noted, but these arguments are not persuasive.

First, with regard to the first argument, the Examiner has noted applicants' argument. However, Frank expressly teaches the process for producing maleic anhydride from n-butane with a low oxygen concentration so as to avoid the flammable limit of the system (see col. 4 ,lines 57-60). Furthermore, the claim did not specify what

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the limiting oxygen concentration can be for the process; therefore, it is plausible to the skilled artisan in the art to assume that the Frank's concentration of oxygen is not less than the limiting oxygen concentration. In order to overcome the prior art, the examiner recommends to file the declaration in which the unexpected result must be shown by the comparison test between them. Therefore, the prior art does read on the claimed invention.

Second, with regard to the second argument, the Examiner has noted applicants' argument. However, applicants have indicated that Kerr does teach the steady state of the claimed process; Kerr also has pointed out that, in order to avoid explosive hazards, 1.0 to 1.5 mole % of the monoolefin is recommended for optimum yield of the product (see col. 4, lines 60-66). Similarly, Frank expressly teaches the process for producing maleic anhydride from n-butane using a complex catalyst and a low oxygen concentration so as to avoid the flammable limits of the system. Both prior art have been involved with the safety issue of avoiding the flammable limits of the system during the production of maleic anhydride under similar reaction conditions (the reactants, etc.). In addition, the claim did not specify what the limiting oxygen concentration can be for the process; therefore, it is plausible to the skilled artisan in the art to assume that the Frank's concentration or Kerr's concentration of oxygen is not less than the limiting oxygen concentration. Therefore, the prior art does read on the claimed invention.

Therefore, all the rejections are maintained.

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Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Taylor Victor Oh whose telephone number is 571-272-0689. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Andres can be reached on 571-272-0670. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


TAYLOR VICTOR OH
PRIMARY EXAMINER

6/23/07